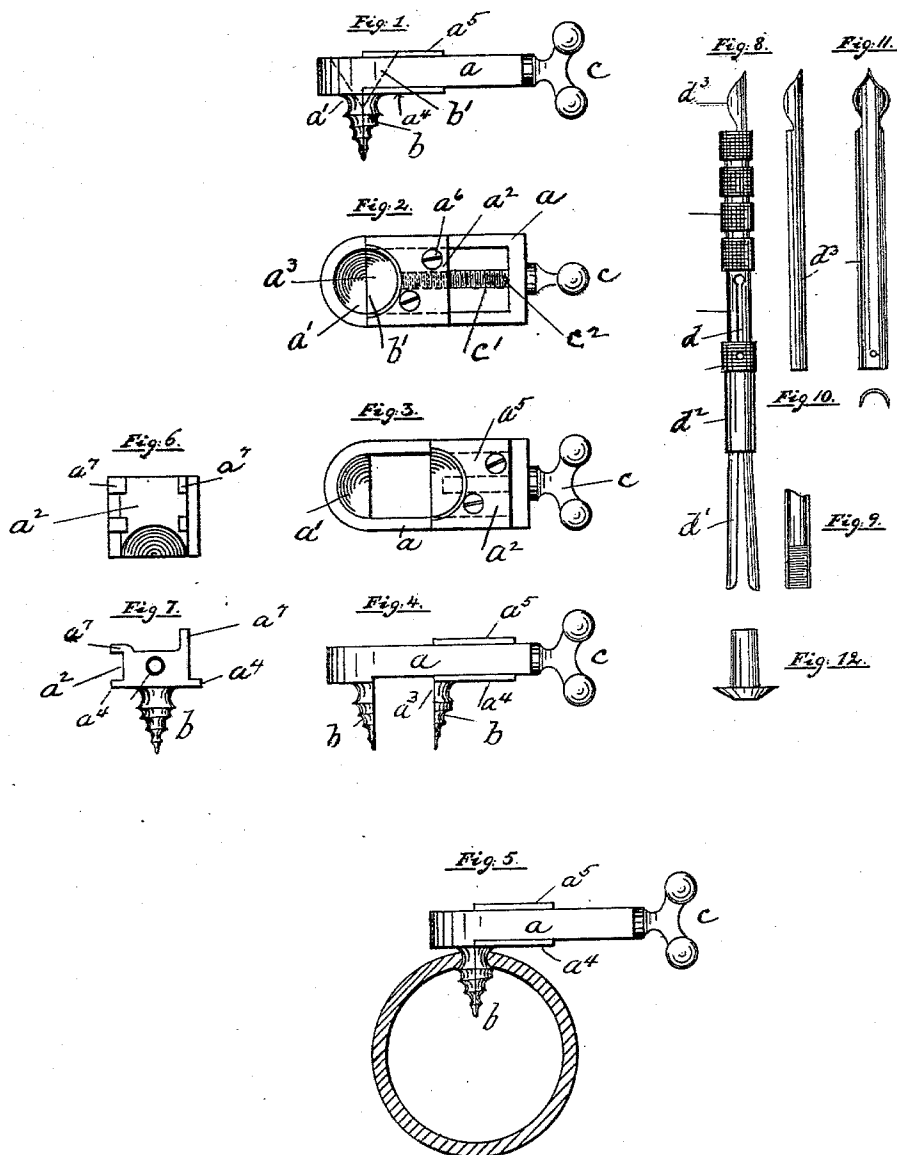


(No Model.)

G. KIRKEGAARD.
REPAIR TOOL FOR PNEUMATIC TIRES.

No. 566,772.

Patented Sept. 1, 1896.



WITNESSES:

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GEORG KIRKEGAARD, OF GIFFORDS, NEW YORK.

REPAIR-TOOL FOR PNEUMATIC TIRES.

SPECIFICATION forming part of Letters Patent No. 566,772, dated September 1, 1896.

Application filed May 14, 1896. Serial No. 591,452. (No model.)

To all whom it may concern:

Be it known that I, GEORG KIRKEGAARD, a citizen of the United States, residing at Giffords, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Repair-Tools for Pneumatic Tires, of which the following is a full, clear, and exact description.

This invention relates to tools for repairing punctures in pneumatic wheel-tires, and has for its object the production of a simple, cheap, and efficient device. The tool consists of a rectangular frame having a fixed jaw at one end and forming a guide for a movable jaw, the latter being a counterpart of the fixed jaw. Between the jaws is a conical chamber having its axis in line with a screw-point standing at right angles to the frame, one-half of the screw-point being formed on each jaw. The movable jaw is caused to slide by means of a threaded rod and thumb-screw.

In the accompanying drawings, Figures 1 and 4 are side elevations of the tool shown with the jaws closed and open, respectively. Figs. 2 and 3 are similar views in plan. Fig. 5 shows the tool adjusted in the tire and ready to spread the puncture. Figs. 6 and 7 are respectively a plan and end elevation of a modified form of the moving jaw. Figs. 8, 9, 10, and 11 are views of an accessory tool; and Fig. 12 shows the mending-plug.

a is a rectangular frame, at one end of which is formed a jaw a' .

a^2 is a block or carriage carrying a second jaw a^3 , a counterpart of the first. The body of this carriage stands between the two side pieces of the frame and is provided with flanges a^4 on the bottom and with an overreaching plate a^5 , secured to the top by screws a^6 , by which the carriage is held in the frame. The jaws each have an extension at right angles to the frame; which when they are together form a pointed screw b , and between the jaws and concentric with the pointed screw a conical chamber b' is formed. This forms a kind of funnel, the point of which is the screw.

c is a thumb-nut or cross-head attached to a threaded rod c' , passing through an opening in the end of the frame a and into a threaded opening in the block or carriage a^2 . The thumb-nut and pin c^2 prevent the rod from

moving longitudinally. It will be observed that when this rod is rotated the movable jaw a^2 is caused to reciprocate in the frame and either approach or recede from the fixed jaw.

In Figs. 6 and 7 I have illustrated a modification of the carriage or movable jaw whereby its construction is materially cheapened. In this form the plate a^5 is dispensed with and substituted by lugs a^7 , two on each side, those on one side being drawn outward, while those on the other are allowed to point upward until the block has been inserted in the frame, when the lugs pointing upward are bent over the side piece of the frame, thereby sustaining the block in position.

The device shown in Figs. 8 to 11 is used to prepare the puncture for sealing the plug when necessary and to insert a plug in place. It consists of a tubular handle d , one end d' of which is split and is surrounded by a sliding sleeve d^2 . The plug shown in Fig. 12 is inserted into the split end of the tube and clamped by forcing the sleeve downward. In the other end of the tube a pointed knife, of peculiar construction, d^3 is inserted. With this the hole or puncture in the tire may be reamed out to make its edges smooth, thus fitting the plug more closely.

The operation of repairing a puncture consists in reaming out the opening with the knife d^3 , (when necessary,) then using the repair-tool with the jaws together. The screw-point is adjusted to the puncture and forced into the opening by rotating the tool until the wall of the tire embraces the base of the screw, as shown in Fig. 5. Then by turning the thumb-nut c in the proper direction the movable jaw is withdrawn from the fixed jaw and the puncture widened sufficiently to admit a plug, Fig. 12, between the jaws. In this position the tool may be left while the plug is adjusted, inasmuch as the threaded rod will hold the jaws against the pressure of the sides of the puncture. Then with a plug properly adjusted in the accessory device (shown in Figs. 8 to 11) and with cement applied to the plug the latter is forced between and through the open jaws of the tool until the head of the plug opens in the tire. The tool is now withdrawn from the puncture by unscrewing it. Then after properly adjusting the plug in the opening the

accessory device is released from the plug and removed, leaving the plug tightly clamped and cemented in the opening.

Having thus described my invention, I claim—

1. In a tire-repairing tool a frame provided with a fixed jaw and a guideway, in combination with a movable jaw sliding in said guideway, substantially as described.
2. In a tire-repairing tool a frame provided with a fixed jaw and a guideway in combination with a movable jaw sliding in said guideway, and means for sliding said movable jaw, substantially as described.
3. In a tire-repairing tool a frame provided with a fixed jaw and a guideway, in combination with a movable jaw sliding in said guideway and a threaded rod provided with a

thumb-nut, and rod working into the movable jaw and by its rotation causing the latter to slide in the guideway.

4. A tire-repairing tool, consisting of a substantially rectangular frame having a fixed jaw at one end, a carriage located between the sides of the frame and provided with flanges embracing said sides, thereby holding the carriage in place, the carriage having a jaw corresponding to the said fixed jaw and means for reciprocating the carriage.

In testimony whereof I subscribe my signature in presence of two witnesses.

GEORG KIRKEGAARD.

Witnesses:

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